```
DDDDDDDDDDD          CCCCCCCCCCCC  LLL
DDDDDDDDDDD          CCCCCCCCCCCC  LLL
DDDDDDDDDDD          CCCCCCCCCCCC  LLL
DDD       DDD        CCC           LLL
DDD       DDD        CCC           LLL
DDD       DDD        CCC           LLL
DDD       DDD        CCC           LLL
DDD       DDD        CCC           LLL
DDD       DDD        CCC           LLL
DDD       DDD        CCC           LLL
DDD       DDD        CCC           LLL
DDD       DDD        CCC           LLL
DDD       DDD        CCC           LLL
DDD       DDD        CCC           LLL
DDD       DDD        CCC           LLL
DDD       DDD        CCC           LLL
DDD       DDD        CCC           LLL
DDDDDDDDDDD          CCCCCCCCCCCC  LLLLLLLLLLLLLLL
DDDDDDDDDDD          CCCCCCCCCCCC  LLLLLLLLLLLLLLL
DDDDDDDDDDD          CCCCCCCCCCCC  LLLLLLLLLLLLLLL
```

```
IIIIII    FFFFFFFFFF
IIIIII    FFFFFFFFFF
  II      FF
  II      FF
  II      FF
  II      FFFFFFFF
  II      FFFFFFFF
  II      FF
  II      FF
  II      FF               ....
  II      FF               ....
IIIIII    FF               ....
IIIIII    FF               ....


LL            IIIIII    SSSSSSSS
LL            IIIIII    SSSSSSSS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II        SSSSSS
LL              II        SSSSSS
LL              II            SS
LL              II            SS
LL              II            SS
LL              II            SS
LLLLLLLLL     IIIIII    SSSSSSS
LLLLLLLLL     IIIIII    SSSSSSS
```

```
0000      1            .TITLE  IF - IF COMMAND EXECUTION
0000      2            .IDENT  'V04-000'
0000      3    ;
0000      4    ;*******************************************************************
0000      5    ;*                                                                 *
0000      6    ;*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                        *
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0000     22    ;*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.        *
0000     23    ;*                                                                 *
0000     24    ;*                                                                 *
0000     25    ;*******************************************************************
0000     26
0000     27    ; IF COMMAND EXECUTION
0000     28    ;
0000     29    ; D. N. CUTLER 9-MAY-77
0000     30    ;
0000     31    ; MODIFIED BY:
0000     32    ;
0000     33    ;       V03-002 PCG0003         Peter George    27-May-1983
0000     34    ;               Add NOTHEN status.
0000     35    ;
0000     36    ;       V03-001 PCG0002         Peter George    24-Feb-1983
0000     37    ;               Remove SETBIT WRK_V_NOSTAT.
0000     38    ;---
```

IF
V04-000

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- IF COMMAND EXECUTION   15-SEP-1984 23:52:25 VAX/VMS Macro V04-00   Page 2
                                          4-SEP-1984 23:40:57 DISK$VMSMASTER:[DCL.SRC]IF.MAR;1 (2)

```
     0000    40 ;
     0000    41 ; MACRO LIBRARY CALLS
     0000    42 ;
     0000    43
     0000    44          PRCDEF                          ;DEFINE PROCESS WORK AREA
     0000    45          WRKDEF                          ;DEFINE COMMAND WORK AREA
     0000    46
     0000    47          $CLIMSGDEF                      ;DEFINE ERROR/STATUS CODES
 00000000    48          .PSECT  DCL$ZCODE,BYTE,RD,NOWRT
```

```
                                0000        50                    .SBTTL  IF COMMAND
                                0000        51       ;+
                                0000        52       ; DCL$IF - IF COMMAND
                                0000        53       ;
                                0000        54       ; THIS ROUTINE IS CALLED AS AN INTERNAL COMMAND TO EXECUTE THE IF DCLS COMMAND.
                                0000        55       ;
                                0000        56       ; INPUTS:
                                0000        57       ;
                                0000        58       ;     R10 = BASE ADDRESS OF COMMAND WORK AREA.
                                0000        59       ;     R11 = BASE ADDRESS OF PROCESS WORK AREA.
                                0000        60       ;
                                0000        61       ; OUTPUTS:
                                0000        62       ;
                                0000        63       ;     THE IF CLAUSE IS EVALUATED AND IF THE RESULTANT VALUE IS TRUE, THE
                                0000        64       ;     THEN CLAUSE IS EXECUTED BY RETURNING CONTROL TO THE COMMAND EXECUTION
                                0000        65       ;     ENTRY POINT. OTHERWISE CONTROL IS RETURNED VIA THE RETURN ADDRESS.
                                0000        66       ;
                                0000        67       ;     R0 LOW BIT CLEAR INDICATES EXPRESSION EVALUATION FAILURE.
                                0000        68       ;
                                0000        69       ;          R0 = DCL$_COMPLX - EXPRESSION TOO COMPLEX.
                                0000        70       ;          R0 = DCL$_EXPSYN - EXPRESSION SYNTAX ERROR.
                                0000        71       ;          R0 = DCL$_IVCHAR - INVALID CHARACTER IN NUMERIC STRING.
                                0000        72       ;          R0 = DCL$_IVOPER - INVALID EXPRESSION OPERATOR.
                                0000        73       ;          R0 = DCL$_UNDSYM - UNDEFINED SYMBOL.
                                0000        74       ;
                                0000        75       ;          R0 = DCL$_NOTHEN - THEN KEYWORD NOT IN EXPECTED LOCATION
                                0000        76       ;
                                0000        77       ;     R0 LOW BIT SET INDICATES SUCCESSFUL COMPLETION.
                                0000        78       ;
                                0000        79       ;          R0 = DCL$_NORMAL - NORMAL COMPLETION.
                                0000        80       ;-
                                0000        81
                                0000        82  DCL$IF::                                                          ;IF COMMAND
                 FFFD'    30    0000        83            BSBW      DCL$BINEXPR                          ;EVALUATE ARITHMETIC EXPRESSION
                 1C 50    E9    0003        84            BLBC      R0,20$                               ;IF LBC EXPRESSION EVALUATION ERROR
        52  F486 CA  04   C3    0006        85            SUBL3     #4,WRK_L_EXPANDPTR(R10),R2           ;GET POINTER TO ''THEN'' STRING
        62  4E454854 8F   D1    000C        86            CMPL      #^A/THEN7,(R2)                       ;''THEN'' KEYWORD?
                 0E       12    0013        87            BNEQ      30$                                  ;NO. THEN ERROR
                 03 51    E9    0015        88            BLBC      R1,10$                               ;IF LBC FALSE RESULT
                                0018        89
                                0018        90       ;
                                0018        91       ; EXECUTE THEN CLAUSE OF IF COMMAND
                                0018        92       ;
                                0018        93
                 FFE5'    31    0018        94            BRW       DCL$CMDSTART
                                001B        95
                                001B        96       ;
                                001B        97       ; BYPASS THEN CLAUSE OF IF COMMAND
                                001B        98       ;
                                001B        99
                                001B       100  10$:      STATUS    NORMAL
                 05          0022       101  20$:      RSB
                                0023       102
                                0023       103       ;
                                0023       104       ; COMMAND SYNTAX ERROR
                                0023       105       ;
                                0023       106
```

```
              FFDA'  30  0023   107 30$:    BSBW    DCL$MARK
   50  00038210 8F   DO  0026   108         MOVL    #CLI$_NOTHEN,R0
                     05  002D   109         RSB
                         002E   110
                         002E   111         .END
```

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If   - IF COMMAND EXECUTION   15-SEP-1984 23:52:25 VAX/VMS Macro V04-00   Page 5
Symbol table   4-SEP-1984 23:40:57 DISK$VMSMASTER:[DCL.SRC]IF.MAR;1 (3)

Symbol	Value	Flags		Symbol	Value
CLI$_NORMAL	= 00030001			PRC_Q_COMMAND	000000E0
CLI$_NOTHEN	= 00038210			PRC_Q_FLUSHTIME	000000D0
DCL$BINEXPR	********	X 02		PRC_Q_GLOBAL	00000028
DCL$CMDSTART	********	X 02		PRC_Q_IMAGENAME	000000D8
DCL$IF	00000000	RG X 02		PRC_Q_KEYPAD	00000040
DCL$MARK	********	X 02		PRC_Q_LABEL	00000030
PRC_B_CONTINUE	000000F3			PRC_Q_LOCAL	00000038
PRC_B_DEFRADIX	000000AE			PRC_Q_SAVEPRIV	000000E8
PRC_B_EXMDEPMOD	000000AD			PRC_T_OUTDVI	0000011C
PRC_B_EXMDEPWID	000000AC			PRC_W_ASTIOSB	000000C6
PRC_B_EXONLYL	0000012D			PRC_W_ASTRETN	000000C8
PRC_B_FLAGS2	000000AF			PRC_W_ASTSTATUS	000000C4
PRC_B_IMGFLAG	00000078			PRC_W_ATTMBX	0000007A
PRC_B_OUTFLAGS	0000012C			PRC_W_FLAGS	00000068
PRC_B_PROMPTLEN	000000F0			PRC_W_INPCHAN	00000064
PRC_C_LENGTH	00000534			PRC_W_ONLEVEL	0000006A
PRC_G_COMMANDS	00000133			PRC_W_OUTIFI	00000114
PRC_G_PROMPT	000000F4			PRC_W_OUTISI	00000116
PRC_K_LENGTH	00000534			PRC_W_OUTMBXCHN	000000CA
PRC_L_CURRKEY	00000048			PRC_W_OUTMBXREF	000000CE
PRC_L_EXMDEPADR	000000A8			PRC_W_OUTMBXSIZ	000000CC
PRC_L_EXTARG	00000094			PRC_W_PMPTCTRL	000000F1
PRC_L_EXTBLK	0000008C			PRC_W_WAITIOSB	00000066
PRC_L_EXTCOD	0000009C			WRK_B_CMDOPT	FFFFFFC3
PRC_L_EXTHND	00000090			WRK_B_MAXPARM	FFFFFFD0
PRC_L_EXTPRM	00000098			WRK_B_MINPARM	FFFFFFD1
PRC_L_IDFLNK	000000BC			WRK_B_PARMCNT	FFFFFFCE
PRC_L_IMGACTSTS	00000080			WRK_B_PARMSUM	FFFFFFCF
PRC_L_INDCLOCK	0000007C			WRK_B_RECALLCNT	FFFFFFC5
PRC_L_INDEPTH	0000005C			WRK_B_VALLEV	FFFFFFC4
PRC_L_INDFAB	0000001C			WRK_B_VERBTYP	FFFFFFC2
PRC_L_INDINPRAB	00000014			WRK_C_LENGTH	FFFF486
PRC_L_INDOUTRAB	00000018			WRK_G_BUFFER	FFFF492
PRC_L_INPRAB	00000008			WRK_G_INPBUF	FFFF896
PRC_L_LASTKEY	0000004C			WRK_G_RESULT	FFFF9B6
PRC_L_LSTSTATUS	000000B0			WRK_K_LENGTH	FFFF486
PRC_L_ONCTLY	000000B8			WRK_L_CHARPTR	FFFF48E
PRC_L_ONERROR	0000006C			WRK_L_DISALLOW	FFFFFE6
PRC_L_OUTOFBAND	000000B4			WRK_L_ERRORRTN	FFFF9AE
PRC_L_OUTRAB	0000000C			WRK_L_EXPANDPTR	FFFF486
PRC_L_OUTRABCTX	00000118			WRK_L_IMAGE	FFFFFE2
PRC_L_PPFLIST	00000070			WRK_L_MARKPTR	FFFF48A
PRC_L_RECALLPTR	0000012F			WRK_L_PAROUT	FFFFFD2
PRC_L_RESTART	00000058			WRK_L_PMPTADDR	FFFF9A2
PRC_L_SAVAP	00000000			WRK_L_PROMPTRTN	FFFF9A6
PRC_L_SAVFP	00000004			WRK_L_PROPTR	FFFFFC6
PRC_L_SEVERITY	00000050			WRK_L_QUABLK	FFFFFCA
PRC_L_SPWN	000000C0			WRK_L_READRTN	FFFF9AA
PRC_L_STACKLM	000000A4			WRK_L_RECALLPTR	FFFFFEA
PRC_L_STACKPT	000000A0			WRK_L_RSLEND	FFFFFB6
PRC_L_STATUS	00000054			WRK_L_RSLNXT	FFFFFBA
PRC_L_STS	00000084			WRK_L_SAVAP	FFFFFF8
PRC_L_STV	00000088			WRK_L_SAVFP	FFFFFFC
PRC_L_SYMBOL	00000060			WRK_L_SAVSP	FFFFFF4
PRC_L_TMBX	00000074			WRK_L_SIGNALRTN	FFFFFD6
PRC_L_TRMLIST	00000010			WRK_L_SPECRTN	FFFF9B2
PRC_Q_ALLOCREG	00000020			WRK_L_TAB_VEC	FFFFFDE

```
WRK_L_VERB                      FFFFFFBE
WRK_W_FLAGS                     FFFFFFF0
WRK_W_FLAGS2                    FFFFFFF2
WRK_W_IMGCHAN                   FFFFFFEE
WRK_W_PMPTLEN                   FFFFF99E
```

```
                             +------------------+
                             ! Psect synopsis !
                             +------------------+
```

PSECT name	Allocation	PSECT No.	Attributes											
. ABS .	00000000 (0.)	00 (0.)	NOPIC	USR	CON	ABS	LCL	NOSHR	NOEXE	NORD	NOWRT	NOVEC	BYTE
ABS	FFFFFFFC (0.)	01 (1.)	NOPIC	USR	CON	ABS	LCL	NOSHR	EXE	RD	WRT	NOVEC	BYTE
DCL$ZCODE	0000002E (46.)	02 (2.)	NOPIC	USR	CON	REL	LCL	NOSHR	EXE	RD	NOWRT	NOVEC	BYTE

```
                       +--------------------------+
                       ! Performance indicators !
                       +--------------------------+
```

Phase	Page faults	CPU Time	Elapsed Time
Initialization	15	00:00:00.05	00:00:01.00
Command processing	102	00:00:00.72	00:00:07.21
Pass 1	170	00:00:04.89	00:00:18.76
Symbol table sort	0	00:00:00.50	00:00:01.46
Pass 2	26	00:00:00.67	00:00:02.97
Symbol table output	11	00:00:00.10	00:00:00.35
Psect synopsis output	2	00:00:00.02	00:00:00.02
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	326	00:00:06.95	00:00:31.77

The working set limit was 1050 pages.
20448 bytes (40 pages) of virtual memory were used to buffer the intermediate code.
There were 30 pages of symbol table space allocated to hold 394 non-local and 3 local symbols.
111 source lines were read in Pass 1, producing 13 object records in Pass 2.
26 pages of virtual memory were used to define 13 macros.

```
                       +----------------------------+
                       ! Macro library statistics !
                       +----------------------------+
```

Macro library name	Macros defined
_255DUA28:[SYSLIB]SYSBLDMLB.MLB;1	0
_255DUA28:[DCL.OBJ]DCL.MLB;1	5
_255DUA28:[SYS.OBJ]LIB.MLB;1	0
_255DUA28:[SYSLIB]STARLET.MLB;2	3
TOTALS (all libraries)	8

497 GETS were required to define 8 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS$:IF/OBJ=OBJ$:IF MSRC$:IF/UPDATE=(ENH$:IF)+EXECML$/LIB+LIB$:DCL/LIB+SYS$LIBRARY:SYSBLDMLB/LIB

GETKEYNAM
LIS

GOTO
LIS

EXPRESS
LIS

HANDLE
LIS

IMAGECTRL
LIS

INITIAL
LIS

INDIRECT
LIS

FILECMDS
LIS

IF
LIS

IMAGEXECT
LIS